

upper masses of loose or but slightly congealed snow often split off and fell away as the masses floated past.

The ice was frequently stained of the yellow ochreous tint described by Sir J. D. Hooker, and found by him to be caused by Diatoms washed up on to the ice by the waves, and hanging on its rough surface.* The colouring was always most marked about the honeycombed wash-lines of the ice blocks. Pancake ice is similarly discoloured by Diatoms in the Arctic regions.†

On February 25th we entered the edge of the pack, sailing amongst some loosened outliers of it. The sea was covered with masses of ice up to 10 feet in length. These consisted mostly of light snow ice, and did not project more than from two to four feet out of water. The upper parts of the masses were composed of white fresh snow, or honeycombed wet frozen snow, which had been partly melted by the waves. Very many of these ice masses were stained of an ochre tint, by Diatoms and other surface organisms.

The lower submerged ice was transparent, but extremely full of large air vesicles. The ice below the water line, and under the overhanging edges at that level, looked blue. The upper masses were quite opaque.

I went in a boat to collect discoloured ice. The discolouration appears far less marked when seen at close quarters. It becomes almost invisible when the porous snow-ice drains dry. When, however, a small piece of the ice is seen floating nearly submerged, it looks almost of a chocolate brown colour.

Mr. Buchanan made experiments on the melting point, and amount of salt contained in salt-water ice. He came to the conclusion from analyses of successive meltings and the varying of the melting point, that in salt-water ice "the salt is not contained in the form of mechanically enclosed brine only, but exists in the solid form, either as a single crystalline substance, or as a mixture of ice and salt crystals."

He thinks that by fractional melting, salt water ice might be made to yield water fit to drink, although when a lump is melted as a whole, the resulting water is undrinkable.‡

We crossed the Antarctic Circle on February 16th, passing about six miles to the south of it. There was open water

* Sir J. D. Hooker's collections were described by Ehrenberg. See Capt. Ross's "Antarctic Voyage," Vol. I., pp. 339, 341. London, J. Murray, 1847. Ehrenberg's "Report on Deposit from Pancake Ice, collected by Dr. Hooker."

† Robert Brown, "On the Discolouration of the Arctic Seas." *Quart. Jour. Micro. Sci.*, 1865, p. 240.

‡ J. Y. Buchanan, M.A., "Observations on Sea-Water Ice," *Proc. R. Soc.*, No. 170, 1876, p. 609.